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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,347	04/11/2006	Byung-Chan Kim	123037-06045881	3497

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EXAMINER
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CHANG, JENNIFER F

ART UNIT	PAPER NUMBER
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2821

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/575,347	<b>Applicant(s)</b> KIM ET AL.	
	<b>Examiner</b> JENNIFER F. CHANG	<b>Art Unit</b> 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-18 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Amendment A received February 19, 2008 has been entered into the record.
2. Claims 1, 4-18 are pending. Claims 2 and 3 are cancelled.

### ***Response to Arguments***

3. Applicant's amendments to the specification in pages 2, 3, 5, 7 and 8 in response to the objections to the specification have been accepted. The objections to the specification have been traversed.
4. Applicant's amendment to the specification the paragraph bridging pages 6 and 7, replacing "the length h of the radiation patch 210" with "the length h of the shorting plate 220" has not been accepted as it constitutes new matter. The original specification does not require that the length of the additional radiation patch must be shorter than the length of the shorting plate, nor can this characteristic be deduced from the figures. Rather, the Figs. 2 and 3 indicate that the first radiation patch 210 and the ground plane are parallel, in which case, the length of the shorting plate h and the length of the additional radiation patch  $h_s$  would be of equal length. Please see ***Claim Rejections - 35 USC § 112*** below for further details.
5. Applicant's arguments with respect to claims 1 and 4-18 have been considered but are moot in view of the new ground(s) of rejection.

***Specification***

6. The disclosure is objected to because of the following informalities:
- a. The specification reads "the length  $h$  of the radiation patch 210," (page 7, line 3) and "the shorting plate 220 has a predetermined length  $h$ ." Reference character " $h$ " has been applied to both a length of the radiation patch and a length of the shorting plate. Reference character " $C$ " appears to be associated with the length of radiation patch 210.
  - b. The specification reads "a width  $w_s$  of the additional radiation patch 240" in reference to Fig. 2, but Fig. 2 does not include reference character  $w_s$ . Fig. 3 includes reference character  $W_s$ , but it is associated with radiation patch 310, not 240.
  - c. The specification reads "The shorting plate 220 has a predetermined length  $h$  and width  $w$ ." The reference character " $w$ " does not appear to be associated with shorting plate 220 in Fig. 2, but reference character " $\omega$ " appears to be associated with the width of shorting plate 220.
  - d. The specification reads "a width side  $\omega$  of the radiation patch 210." The reference character " $\omega$ " does not appear to be associated with radiation patch 210 in Fig. 2, but reference character " $D$ " appears to be associated with the width of the radiation patch 210.

Appropriate corrections are required.

***Claim Objections***

7. Claims 9, 10, 13 and 14 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is

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required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

8. Claim 8 contains a typographical error “pate” in line 18.

***Claim Rejections - 35 USC § 112***

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 recites the limitation “a second radiation patch having a length shorter than the length of the shorting plate.” This limitation is not found in the written specification, nor can it be deduced from the drawings. The specification as well as cancelled claim 3 disclose that the length of the second radiation patch 240 is shorter than the length of the first radiation patch 210 (page 7, lines 2-4). The limitation should be either cancelled or amended to read “a second radiation patch having a length shorter than the length of *the first radiation patch*.” The examiner has amended claim 1 as such for the purposes of this office action.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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12. Claims 5, 11, 12, 15, 16, and 18 are rejected under 35 U.S.C. 112, second paragraph.

13. Claims 5 and 18 recites the limitations "the number of corrugated hollows," "the corrugated edge" and "the predetermined length and width of the corrugated hollows." There is insufficient antecedent basis for these limitations in the claims.

14. Claims 11 and 12 recite the limitation "the first width." There is insufficient antecedent basis for this limitation in the claims.

15. Claim 15 recites the limitations "the corrugated edge" in line 2. There is insufficient antecedent basis for this limitation in the claim.

16. Claim 16 recites the limitation "the first edge." There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

18. Claims 1, 4, 6, 7, 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Kenoun.

19. As to claim 1, Kenoun teaches a planar inverted F antenna having a radiation patch, comprising:

a first radiation patch (120, Fig. 1) radiating a signal;

a ground plate (200, Fig. 2) for grounding the first radiation patch;

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a feeding line (100, 210, Fig. 2) for supplying an electric power to the first radiation patch;

a shorting plate (130, Fig. 2) having a length disposed between the first radiation patch and the ground plate, and coupled to the first radiation patch along a first width and coupled to the ground plate for shorting the first radiation patch along a second width, said second width being located opposite to the first width; and

a second radiation patch (125, Fig. 2 or 115, Fig. 3) connecting the first radiation patch and the ground plate and having a length shorter than the length of the first radiation patch.

20. As to claim 4 and 17, Kenoun teaches the length and a width of the second radiation patch are determined according to a desired resonant frequency ("Additional adjustments may be made, such as reducing the height and increasing the width of component of the antenna assembly based on tuning requirements," [0019])

21. As to claim 6, Kenoun teaches the second radiation patch (115, Fig. 3) is located on a side of the first radiation patch opposite to the shorting plate.

22. As to claim 7, Kenoun teaches the second radiation patch (125, Fig. 2) is located on a side of the first radiation patch adjacent to the shorting plate.

23. As to claim 16, Kenoun teaches the feeding line (100, Figs, 1-3) is disposed between a first edge of the first radiation patch and the ground plate.

24. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Chen (US 2003/0038750) hereafter referred to as Chen. Chen teaches a planar inverted F antenna having a radiation patch, comprising:

a first radiation patch (22, Fig. 2) for radiating a signal, comprising:

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a first edge (29, Fig. 2);

a second edge parallel to the first edge and having a length smaller than a length of the first edge (a portion of 28, Fig. 2 that extends from the corner to the beginning of the corrugated portion);

a third edge adjacent to the first edge and connecting the first edge and the second edge at a first point and a second point (Fig. 2), respectively;

a fourth edge adjacent to the first edge and parallel to the third edge, said fourth edge connecting the first edge at a third point (Fig. 2); and

a corrugated edge (portion of 28, Fig. 2) connecting the fourth edge and the second edge at fourth and fifth points, respectively, wherein said fourth point is located away from the third point and on the fourth edge and said fifth point being located away from the second point and on the second edge;

a ground plate (20, Fig. 2) for grounding the first radiation patch;

a feeding line (26, Fig. 2) for supplying an electric power to the first radiation patch; and

a shorting plate (24, Fig. 2) disposed between the first radiation patch and the ground plate, wherein said first radiation patch is disposed in a plane parallel to the ground plate (“flat metal plate 22 in parallel with the metal ground plane,” [0022]).



***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER F. CHANG whose telephone number is (571) 270-3831. The examiner can normally be reached on Monday-Friday 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JENNIFER F CHANG/  
Examiner, Art Unit 2821

/Huedung Cao Mancuso/  
Primary Examiner, Art Unit 2821